

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2009-XXXX
FOR
NORTH OF RIVER SANITARY DISTRICT NO. 1
AND
SILLS PROPERTIES, INC.
WASTEWATER TREATMENT FACILITY AND
WATER RECLAMATION
KERN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board), finds that:

1. Waste Discharge Requirements (WDRs) Order No. 92-016, adopted by the Central Valley Water Board on 24 January 1992, for North of River Sanitary District No. 1 (Sanitary District) was to regulate its previous wastewater treatment facility (WWTF) located west of Oildale, in Kern County.
2. The WDRs authorized a discharge of 5.5 million gallons per day (mgd) of undisinfected secondary treated wastewater to four 32.5-acre unlined storage ponds with a combined capacity of 1,488 acre-ft and to 2,345 acres of farmland, of which 1,565 acres were owned and operated by Sills Properties, Inc., a California Corporation and regulated by Water Reclamation Requirements (WRRs) Order No. 92-019. The other 780 acres were owned and operated by the Sanitary District.
3. In August of 1999, the Sanitary District completed construction of a new WWTF near its effluent reclamation land and storage ponds and abandoned its previous WWTF. The new WWTF is in the Northwest Quarter of Section 36, Township T28S, Range R24E, MDB&M, and three and a half miles west of the City of Shafter as shown on Attachment A, which is attached hereto and made part of this Order by reference.
4. In December 2008, the Sanitary District submitted a Report of Waste Discharge (RWD) for a proposed expansion of its WWTF from 5.5 mgd to 7.5 mgd.
5. WDRs Order No. 92-016 needs to be updated to ensure that the discharge is consistent with Central Valley Water Board plans and policies and prescribe requirements that reflect changes the Sanitary District has made to its WWTF and water recycling operation.
6. The Sanitary District is the primary entity responsible for the maintenance and operation of the WWTF. Sills Properties, Inc. is the primary entity, and the Sanitary District is the secondary entity, responsible for the application of recycled wastewater and compliance with the water recycling requirements of this Order. North of River Sanitary District No. 1 and Sills Properties, Inc. are hereafter jointly referred to as Discharger.

Existing Wastewater Treatment Facility

7. The existing WWTF consists of a headworks with two mechanical bar screens, a lift station, a vortex grit removal system, addition of coagulant (Ferric Chloride) and Polymer, a primary clarifier, a plastic media tricking filter, a secondary clarifier, and primary and secondary sludge digesters operating in series. The effluent is then used to irrigate alfalfa, wheat, and corn. When irrigation demand is low, effluent is sent to the storage ponds. A schematic plan of the WWTF is shown on Attachment B, which is attached hereto and made part of this Order by reference.
8. The expansion of the WWTF proposes a discharge of 7.5 mgd of undisinfected secondary treated wastewater to four 32.5-acre unlined storage ponds with a combined capacity of 1,488 acre-ft, and to 2,380 acres of farmland, of which 1,740 acres (Assessor's Parcel Nos. 088-210-01, 088-180-02, 088-180-34, 088-180-06, 088-180-07, 088-180-10, 088-180-12, 090-240-01, 090-240-20, 090-240-18, 090-240-21, 090-240-04, 090-140-08, 090-240-08, 090-240-07, 090-240-17, and 090-270-07) are own and operated by Sill Properties, Inc. The other 640 acres (Assessor's Parcel Nos. 088-210-06, and 088-210-05) are own by the Sanitary District and operated by Sill Properties, Inc.
9. The water and nitrogen balance in the RWD shows that an additional storage pond would need to be constructed to accommodate the flow increase to 7.5 mgd. This indicates that the WWTF will utilize all of its current storage pond capacity. The unlined storage ponds could potentially degrade groundwater.
10. The Discharger has twelve unlined sludge drying beds and is proposing to construct mechanical dewatering facilities. The existing sludge drying beds will be used for dried sludge staging prior to land application. The Discharger applies sludge as a soil amendment to 80 acres of its land.
11. Self-Monitoring data from January 2006 to December 2008 self-monitoring reports (SMRs) characterize the discharge as follows:

Constituent	Units	Influent	Effluent
Electrical Conductance (EC)	µmhos/cm	---	818
Biochemical Oxygen Demand (BOD)	mg/L	208	34
Total Suspended Solids (TSS)	mg/L	315	18

Sanitary Sewer Overflows

12. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the treatment facility. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks,

highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage/conveyance facilities.

13. On 2 May 2006, the State Water Resources Control Board (hereafter State Water Board) adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order). The General Order requires all public agencies that own or operate sanitary sewer systems greater than one mile in length to comply with this order. The Discharger's collection system is greater than one mile in length; therefore, the Discharger applied for, and is covered by, the General Order.

Water Recycling

14. On 24 January 1992, the Central Valley Water Board adopted WRRs Order No. 92-019, which prescribes requirements for Silks Properties, Inc., to use undisinfected secondary treated wastewater from the WWTF on its 1,565 acres of reclaimed land.
15. The Reclamation Area consists of approximately 2,380 acres of available farmland, of which 1,950 acres of land will be utilized to grow crops: 1,080 acres will be used to grow alfalfa, 490 acres to grow wheat, and 380 acres to grow corn. Wheat and corn are grown in a double crop fashion.
16. Nitrogen uptake rates for alfalfa, wheat, and corn are 480 lbs/acre/year, 175 lbs/acre/year, and 250 lbs/acre/year, respectively, based on the *Western Fertilizer Handbook, 9th Edition*.
17. At the permitted flow of 7.5, and an average nitrogen concentration of 27 mg/L, the total nitrogen loading to the 1,950 irrigated acres of the Reclamation Area is about 316 lbs/acre/year, which will not exceed the nutrient loading at agronomic rates, based on the current cropping distribution.

Site-Specific Conditions

18. The WWTF and Reclamation Area are in an arid climate characterized by dry summers and mild winters. The rainy season generally extends from November through March. Occasional rains occur during spring and fall months, but summer months are dry. Average annual precipitation and evaporation in the discharge area are about 4 inches and 65 inches, respectively, according to information published by the California Department of Water Resources (DWR).

19. Soils in the Reclamation Area are predominately Garces Silt Loam, followed by Panoche Clay Loam, according to the Web Soil Survey published by the United States Department of Agriculture Natural Resources Conservation Services. Garces Silt Loam and Panoche Clay Loam have been assigned a land capacity classification of 3s and 2s, respectively. These soils have severe to moderate limitations that restrict the choice of plants and require moderate conservation practices. These soils also have limitations within the root zone, such as shallowness of the root zone, a high content of stones, a low available water capacity, low fertility, and excessive salinity.
20. Land uses in the vicinity of the WWTF include: pasture, field crops, and vineyard, according to the Kern County 1998 Land Use Map published by the Department of Water Resources. This is not a definitive inventory of crops that are or could be grown in the area. A detailed land use study to identify specific crops grown in the area is needed.
21. The WWTF is located outside the 100-year floodplain according to Federal Emergency Management Agency maps. However, the WWTF is located within Zone X, with a 1% annual chance of inundation with water depths of one foot or less.
22. The Discharger is not required to obtain coverage under a National Pollutant Discharge Elimination System general industrial storm water permit for the WWTF because all storm water runoff is retained onsite and does not discharge to a water of the United States.

Groundwater Considerations

23. A 1999 Water Supply Report developed by the Kern County Water Agency (KCWA) and published in May 2003 was reviewed to determine the depth to groundwater and water quality. The flow gradient of groundwater in both the unconfined and confined aquifers could not be determined from the report. According to the KCWA, the TDS and EC concentrations in the unconfined aquifer are approximately 500 mg/L and 770 μ mhos/cm, respectively. The TDS and EC concentrations in the confined aquifer are about 200 mg/L and 300 μ mhos/cm, respectively.
24. The groundwater-monitoring network at the WWTF consist of two groundwater monitoring wells (MW-1 and MW-2). The depths to groundwater in MW-1 and 2, as reported in the RWD, are approximately 200 and 250 feet below ground surface (bgs), respectively. Flow gradient of first encountered groundwater cannot be determined with two monitoring wells; a minimum of three wells are needed.
25. Both monitoring wells have multiple screen intervals. This does not provide an adequate representation of groundwater quality. Further, multiple screen intervals in a monitoring well can provide inaccurate readings of groundwater depth.

26. Average concentrations for constituents of concern based on monitoring well data from January 2006 to June 2008 are presented below:

Constituent	Units	MW-1	MW-2
EC	µmhos/cm	2,967	1,867
Total Dissolved Solids	mg/L	2,567	1,270
Chloride	mg/L	623	310
Sodium	mg/L	243	223
NO ₃ (N)	mg/L	52	32

27. Based on the information provided in Finding No. 23 through 26, the groundwater-monitoring network was found inadequate. Background quality of first-encountered groundwater beneath the WWTF and disposal area cannot be determined. The Sanitary District needs to conduct a groundwater investigation and determine the quality of first-encountered groundwater, and at what depth it occurs.
28. Source water samples are collected from water wells that supply the District Service Area. Source water was reported at 252 µmhos/cm in 2006; 544 µmhos/cm in 2007; 381 µmhos/cm in 2008; and 432 µmhos/cm in 2009.

Basin Plan, Beneficial Uses, and Water Quality Objectives

29. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004* (hereafter Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting all waters of the Basin, and incorporates, by reference, plans and policies of the State Water Resources Control Board (State Water Board). Pursuant to Section 13263(a) of the California Water Code (CWC), these requirements implement the Basin Plan.
30. Water in the Tulare Lake Basin is in short supply, requiring importation of surface water from other parts of the State. The Basin Plan encourages recycling on irrigated crops wherever feasible and indicates that evaporation of recyclable wastewater is not an acceptable permanent disposal method where the opportunity exists to replace an existing use or proposed use of fresh water with recycled water.
31. The WWTF is in Detailed Analysis Unit (DAU) No. 255 within the Kern Basin hydrologic unit. The Basin Plan identifies the beneficial uses of groundwater in this DAU as municipal and domestic supply, agricultural supply, industrial service supply, and wildlife habitat supply.

32. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22. The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
33. The Basin Plan establishes narrative water quality objectives for Chemical Constituents, Taste and Odors, and Toxicity. The Toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.
34. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including:
- a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum EC shall not exceed the EC of the source water plus 500 $\mu\text{mhos/cm}$. When the source water is from more than one source, the EC shall be a weighted average of all sources.
 - b. Discharges to areas that may recharge good quality groundwater shall not exceed an EC of 1,000 $\mu\text{mhos/cm}$, a chloride content of 175 mg/L, or boron content of 1.0 mg/L.

These effluent limits are considered best practicable treatment or control (BPTC).

35. The Basin Plan requires municipal WWTFs that discharge to land to comply with treatment performance standards for BOD₅ and TSS. WWTFs that preclude public access and are greater than 1 mgd must provide removal of 80 percent or reduction to 40 mg/L, whichever is more restrictive, for both BOD₅ and TSS.

Antidegradation Analysis

36. State Water Resources Control Board Resolution No. 68-16 ("Policy with Respect to Maintaining High Quality Water of the State") (hereafter Resolution No. 68-16) prohibits degradation of groundwater unless it has been shown that:
- a. The degradation is consistent with the maximum benefits to the people of the State;

- b. The degradation will not unreasonable affect present and anticipated future beneficial uses;
 - c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives, and
 - d. The Discharger employs BPTC to minimize degradation.
37. Degradation of groundwater by some of the typical waste constituents released with discharge from a municipal wastewater utility after effective source control, treatment, and control is consistent with maximum benefit to the people of the State. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impacts on water quality will be substantially less. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and therefore sufficient reason to accommodate growth and groundwater degradation provided terms of the Basin Plan are met.
38. Constituents of concern that have the potential to degrade groundwater include salts and nutrients. This Order establishes terms and conditions of discharge to ensure that the discharge does not unreasonably affect present and anticipated uses of groundwater and includes groundwater limitations that apply water quality objectives established in the Basin Plan to protect beneficial uses. The discharge will likely not impair the beneficial uses of groundwater because:
- a. For nitrogen, shallow groundwater already contains nitrate concentrations in excess of water quality objective as a result of previous discharges and agricultural practices in the area. This Order includes a time schedule to meet an effluent nitrogen limit of 10 mg/L and/or demonstrate management practices to preclude any further degradation for nitrates.
 - b. For Salinity, the Basin Plan contains effluent limits of EC of SW + 500 μ mhos/cm, 1,000 μ mhos/cm max that considered the antidegradation policy when adopted. Ambient groundwater conditions for salinity appear to be greater than 1000 μ mhos/cm. This Order sets a groundwater limit for EC at either 900 μ mhos/cm (which is the lower secondary MCL for consumer acceptance recommended to control taste, color and odor), or if ambient groundwater is greater than 900 μ mhos/cm, at background EC.

Treatment and Control Practices

39. The WWTF described in Finding Nos. 7 through 11, will provide treatment and control of the discharge that incorporates:
- a. secondary treatment;
 - b. pretreatment monitoring and compliance assessment;
 - c. recycling of wastewater for crop irrigation;
 - d. appropriate biosolids handling and treatment for reuse;
 - e. an operation and maintenance (O&M) manual; and
 - f. certified operators to ensure proper operation and maintenance.

Water Recycling Criteria

40. Domestic wastewater contains pathogens harmful to humans that are typically measured by means of total or fecal coliform, as indicator organisms. The California Department of Public Health (DPH), which has primary statewide responsibility for protecting public health, has established statewide criteria in Title 22, California Code of Regulations, Section 60301 et seq., (hereafter Title 22) for the use of recycled water and has developed guidelines for specific uses. Revisions of the water recycling criteria in Title 22 became effective on 2 December 2000. The revised Title 22 expands the range of allowable uses of recycled water, establishes criteria for these uses, and clarifies some of the ambiguity contained in the previous regulations.
41. A 1988 Memorandum of Agreement (MOA) between DPH and State Water Resources Control Board (State Water Board) on the use of recycled water establishes basic principles relative to the agencies and the regional water boards. In addition, the MOA allocates primary areas of responsibility and authority between these agencies, and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to the use of recycled water in California.
42. State Water Board Resolution No. 77-1, Policy with Respect to Water Recycling in California, encourages recycling projects that replace or supplement the use of fresh water, and the Water Recycling Law (California Water Code Section 13500-13529.4) declares that utilization of recycled water is of primary interest to the people of the State in meeting future water needs.

43. The Basin Plan encourages recycling on irrigated crops wherever feasible and indicates that evaporation of recyclable wastewater is not an acceptable permanent disposal method where the opportunity exists to replace an existing use or proposed use of fresh water with recycled water.
44. Title 22, Section 60323 requires recyclers of treated municipal wastewater to submit an engineering report detailing the use of recycled water, contingency plans, and safeguards. Central Valley Water Board files do not contain a Title 22 Engineering Report. A provision requiring the Discharger to submit a report pursuant to Title 22 of the California Code of Regulations is included in this Order.

Other Regulatory Considerations

45. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in Title 40, Code of Federal Regulations, Part 503, Standards for the Use or Disposal of Sewage Sludge, which establishes management criteria for protection of ground and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to EPA.
46. As the discharge consists of treated domestic sewage and incidental discharges from treatment and storage facilities associated with a domestic wastewater treatment plant, and as these discharges are regulated by waste discharge requirements consistent with applicable water quality objectives, the WWTF and its discharge is exempt from containment pursuant to Title 27, section 20090(a).

CEQA

47. North of River Sanitary District No. 1 adopted a Negative Declaration on 18 October 1989, in accordance with the California Environmental Quality Act (CEQA), for the expansion of a regional WWTF to an ultimate capacity of 12 mgd.
48. The Central Valley Water Board, as a responsible agency pursuant to CEQA, reviewed the Negative Declaration and found it did not fully address potential impacts on groundwater from the project. However, this Order includes effluent limits for salinity, BOD, TSS, and nitrogen, and groundwater limits for nitrate, EC, and other constituents with MCLs, taste and odor producing, and toxicity constituents. Compliance with these limits will mitigate any significant impacts to water quality.

General Findings

49. Pursuant to California Water Code Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

50. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.
51. California Water Code Section 13267(b) states that: "In conducting an investigation specified in subdivision (a), the Central Valley Water Board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Central Valley Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the Central Valley Water Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."
52. The technical reports required by this Order and the attached Monitoring and Reporting Program No. R5-2009-XXXX are necessary to assure compliance with these waste discharge requirements. The Discharger operates the WWTF that discharges the waste subject to this Order.
53. The California Department of Water Resources set standards for the construction and destruction of groundwater wells, as described in California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 94-81 (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to California Water Code Section 13801, apply to all monitoring wells.

Public Notice

54. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
55. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
56. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that Waste Discharge Requirements Order No. R5-92-016 and Water Reclamation Requirements Order No. R5-92-019 are rescinded and that, pursuant to Sections 13263 and 13267 of the California Water Code, North of River Sanitary District No. 1 and Sills Properties, Inc. and their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. Discharge of waste to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated wastes, except as allowed by *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991, E.2 is prohibited.
3. Discharge of waste classified as 'hazardous', as defined in Section 2521(a) of Title 23, California Code of Regulations, Section 2510 et seq., is prohibited. Discharge of waste classified as 'designated', as defined in California Water Code Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.

B. Effluent Limitations

1. The effluent discharge shall not exceed the following limitations:

Constituent	Units	Monthly Average	Daily Maximum
BOD ₅ ¹	mg/L	40	80
TSS ²	mg/L	40	80
Chloride	mg/L	175	---

1 Five day biochemical oxygen demand (BOD₅)

2 Total suspended solids (TSS)

2. The arithmetic mean of BOD₅ and TSS in effluent samples collected over a monthly period shall not exceed 20 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (80 percent removal).
3. The 12-month rolling average EC of the discharge shall not exceed the 12-month rolling average EC of the source water plus 500 µmhos/cm. Compliance with this effluent limitation shall be determined monthly.
4. After the expansion of the WWTF is complete, the Total Nitrogen of the discharge shall not exceed the monthly average of 10 mg/L unless Provision H.26 is satisfied.

5. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that caused violation of groundwater limitations.

C. Discharge Specifications

1. The monthly average discharge flow shall not exceed 7.5 mgd.
2. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
3. Public contact with effluent (treatment works, Ponds, Reclamation Area) shall be precluded through such means as fences, signs (in accordance with Title 22, California Code of Regulations (CCR) Section 60310(g)), or acceptable alternatives.
4. Objectionable odors shall not be perceivable beyond the limits of the WWTF property at an intensity that creates or threatens to create nuisance conditions.
5. Effluent storage ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the winter. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
6. On or about **1 October** of each year, available disposal pond storage capacity shall at least equal the volume necessary to comply with Discharge Specification C.5.
7. Ponds shall be managed to prevent breeding of mosquitoes. In particular,
 - a. An erosion control plan should assure that coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, and herbicides.
 - c. Dead algae, vegetation and other debris shall not accumulate on the water surface.
 - d. Vegetation management operations in areas in which nesting birds have been observed shall be carried out either before or after, but not during, the 1 April to 30 June bird nesting season.

D. Recycling Specifications

The following specifications apply to the Reclamation Area under the ownership or control of the Discharger.

1. Use of undisinfected secondary treated recycled water shall be limited to flood irrigation of fodder, fiber, and seed crops not eaten by humans or for gazing of non-milking cattle and shall comply with the provisions of Title 22.
2. The Discharger will maintain the following setback distances from areas irrigated with recycled water:

<u>Setback Distance (feet)</u>	<u>To</u>
25	Property Line
30	Public Roads
50	Drainage Courses
100	Irrigation Wells
150	Domestic Wells

3. No physical connection shall exist between recycled water piping and any domestic water supply or domestic well, or between recycled water piping and any irrigation well that does not have an air gap or reduce pressure principle device.
4. The perimeter of the Reclamation Area shall be graded to prevent ponding along public roads or other public areas and prevent runoff onto adjacent properties not owned or controlled by the Discharger.
5. Areas irrigated with recycled water shall be managed to prevent nuisance conditions or breeding of mosquitoes. More specifically:
 - e. All applied irrigation water must infiltrate completely within a 48-hour period;
 - f. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation; and
 - g. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.
6. Recycling of WWTF effluent shall be at reasonable agronomic rates considering the crop, soil, climate, and irrigation management plan. The annual nutrient loading of Reclamation Areas, including the nutritive value of organic and chemical fertilizers and recycled water, shall not exceed crop demand.

7. Public contact with recycled water shall be controlled using signs and/or other appropriate means. Signs of a size no less than four inches high by eight inches wide with proper wording (shown below) shall be placed at all areas of public access and around the perimeter of all areas used for effluent disposal or conveyance to alert the public of the use of recycled water. All signs shall display an international symbol similar to that shown in Attachment C, as part of this Order, and present the following wording:

“RECYCLED WATER – DO NOT DRINK”

“AGUA DE DESPERDICIO RECLAMADA – POR FAVOR NO TOME”

E. Sludge Specifications

Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advance wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTF. Biosolids refers to sludge that has undergone sufficient treatment and testing to quality for reuse pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation.

1. Sludge and solid waste shall be removed from screens, sumps, aeration basins, ponds, clarifiers, etc. as needed to ensure optimal plant operation.
2. Treatment and storage of sludge generated by the WWTF shall be confined to the WWTF property.
3. Any handling and storage of residual sludge, solid waste, and biosolids on property of the WWTF shall be temporary (i.e., no longer than two years) and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate groundwater limitation of this Order.
4. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements will satisfy this specification.
5. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a Regional Water Board or the State Water Board or a local

(e.g., county) program authorized by a Regional Water Board. In most cases, this means the General Biosolids Order (State Water Board Water Quality Order No. 2004-12-DWQ, "General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities"). For a biosolids use project to be authorized by the General Biosolids Order, the Discharger must file a complete Notice of Applicability for each project.

6. Any proposed change in sludge use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

F. Pretreatment Requirements

1. The Discharger shall implement the necessary legal authorities, programs and controls to ensure that the following incompatible waste are not introduced to the treatment system, where incompatible wastes are:
 - a. Wastes that create a fire or explosion hazard in the treatment works;
 - b. Wastes that will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;
 - c. Solid or viscous wastes in amounts that cause obstruction to flow in sewers, or which cause other interference with proper operations or treatment works;
 - d. Any waste, including oxygen demanding pollutants (BOD₅, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;
 - e. Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F), unless the treatment works is designed to accommodate such heat;
 - f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - g. Pollutants that result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and
 - h. Any trucked or hauled pollutants, except at points predesignated by the Discharger.

2. The Discharger shall implement the controls necessary to ensure that the following incompatible wastes are not introduced to the treatment system, where incompatible wastes are:
 - a. Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or
 - b. Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.

G. Groundwater Limitations

1. Release of waste constituents from any treatment or storage component associated with the discharge shall not cause or contribute to groundwater:
 - a. Containing constituent concentrations in excess of the concentrations specified below or natural background quality whichever is greater:
 - (i) Nitrate as nitrogen of 10 mg/L.
 - (ii) Electrical Conductivity of 900 μ mhos/cm.
 - (iii) Total Coliform Organisms of 2.2 MPN/100 mL.
 - (iv) For constituents identified in Title 22, the MCLs quantified therein.
 - b. Containing taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

H. Provisions

1. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as Standard Provision(s).
2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. 2009-XXXX, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program of the Discharger self-monitoring reports.

3. The Discharger shall keep at the WWTF a copy of this Order, including its MRP, Information Sheet, attachments, and Standard Provisions, for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. The Discharger shall not allow pollutant-free wastewater to be discharged into the Facility collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means storm water (i.e., inflow), groundwater (i.e., infiltration), cooling waters, and condensates that are essentially free of pollutants.
5. The Discharger must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This Provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger only when the operation is necessary to achieve compliance with the conditions of this Order.
6. All technical reports and work plans required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. To demonstrate compliance with sections 415 and 3065 of Title 16, CCR, all technical reports must contain a statement of the qualifications and responsible registered professional(s). As required by these laws, completed technical reports and work plans must bear the signature(s) and seal(s) of the registered professionals(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
7. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to the Central Valley Water Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

8. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
9. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
10. As a means of discerning compliance with Discharge Specifications C.4, the dissolved oxygen (DO) content in the upper one foot of any wastewater pond shall not be less than 1.0 mg/L for three consecutive days. Should the DO be below 1.0 mg/L during a weekly sampling event, the Discharger shall take all reasonable steps to correct the problem and commence daily DO monitoring in the affected ponds until the problem has been resolved. If unpleasant odors originating from affected ponds are noticed in developed areas, or if the Discharger received one or more odor complaints, the Discharger shall report the findings in writing within 5 days of the date and shall include a specific plan to resolve the low DO results to the Central Valley Water Board within 10 days of that date.
11. The pH of the discharge shall not be less than 6.5 or greater than 8.3 pH units for more than three consecutive sampling events. In the event that the pH of the discharge is outside of this range for more than three consecutive sampling events, the Discharger shall submit a technical evaluation in its monthly SMRs documenting the pH of the discharge to the reclamation area, and if necessary demonstrate that the effect of the discharge on soil pH will not exceed the buffering capacity of the soil profile.
12. The Sanitary District shall maintain and operate all ponds sufficient to protect the integrity of containment levees and prevent overtopping or overflows. Unless a California civil engineer certifies (based on design, construction, and condition of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically). As a means of management and to discern compliance with this Provision, the Discharger shall install

and maintain in each pond permanent markers with calibration that indicates the water level at design capacity and enables determination of available operational freeboard.

13. The Discharger shall submit the technical reports and work plans required by this Order for Central Valley Water Board staff consideration and incorporate comments they may have in a timely manner, as appropriate. The Discharger shall proceed with all work required by the following provisions by the due dates specified.
14. The Discharger shall obtain coverage under, and comply with, Statewide General Waste Discharge Requirements For Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ.
15. **By 1 January 2010**, and periodically thereafter (but not less than once every **five years**) the Discharger shall document its efforts to promote new or expanded wastewater recycling and reclamation opportunities.
16. **By 1 January 2010**, the Sanitary District shall submit a Work Plan evaluating the existing groundwater network and its effectiveness to investigate the areas affected and potentially affected by the WWTF and its discharge(s) to land. Based on the evaluation, the Work Plan shall propose a time schedule for additional groundwater monitoring wells, as appropriate.

The Work Plan shall satisfy the information needs specified in the monitoring well installation section of Attachment D, *Standard Monitoring Well Provisions for Waste Discharge Requirements*.
17. **By 1 June 2010**, complete well installation and commence groundwater monitoring in accordance with the work plan submitted pursuant to Provision H.15 and Monitoring and Reporting Program No. 2009-XXXX.
18. **By 1 July 2010**, submit a monitoring well installation report that meets the requirements of Attachment D.
19. **By 1 January 2010**, the Discharger shall submit a technical report describing a sludge management plan that satisfies the information requirements of Attachment E, *Sludge Management Plan*.
20. **By 1 January 2010**, the Discharger shall submit a complete Notice of Intent for coverage under the State Water Board's Water Quality Order No. 2004-0012-DWQ, "General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities".

21. **By 1 January 2010**, the Sanitary District shall submit a work plan and time schedule for installation of its proposed mechanical dewatering facilities and elimination of the use of unlined sludge drying beds.
22. **By 1 June 2010**, the Discharger shall conduct a detailed land use study that identifies: crops grown around the WWTF, regional cropping patterns, and detailed soil classifications. The study needs to identify appropriate concentrations for constituents of salinity in irrigation water that will be protective of all crops grown in the vicinity.
23. The Sanitary District shall comply with all pretreatment requirements contained in 40 CFR 403 and shall be subject to enforcement actions, penalties, fines, and other remedies by the U.S. EPA or other appropriate parties, as provided in the Clean Water Act, as amended. The Discharger shall implement and enforce its Publicly-Owned Treatment Works (POTW) Pretreatment Program once approved, which is hereby made an enforceable condition of these requirements. The U.S. EPA may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Clean Water Act.
24. The Sanitary District shall enforce the requirements promulgated under Sections 307(b),(c),(d), and 402(b) of the Clean Water Act. The Sanitary District shall cause industrial users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.
25. **By 1 June 2010**, the Sanitary District shall submit a proposed pretreatment program that includes the following:
 - a. An evaluation of the legal authority necessary for the administration and enforcement of the requirements of Sections 307(b) and (c) and 402(b)(8) of the Clean Water Act.
 - b. Technical information necessary to develop and implement the pretreatment the pretreatment ordinance or other means of enforcing pretreatment standards.
 - c. An evaluation of the financial programs and revenue sources to implement the program, including proposed funding and staffing levels.
 - d. A monitoring program which will implement the requirements of the pretreatment program.

- e. A list of monitoring equipment required to implement the pretreatment program and a description of municipal facilities necessary for monitoring and analysis of industrial wastes.
 - f. Specific effluent limitations for prohibited pollutants (as defined by 40 CFR 403.5) which shall be incorporated into the pretreatment program.
 - g. Complete pretreatment program package (40 CFR 403.9) with request for pretreatment program approval.
26. After the Central Valley Water Board has approved the pretreatment program tasks listed in Provision H.24 and the EPA has approved the program, the Sanitary District shall perform the pretreatment functions required in 40 CFR 403, including, but not limited to:
- a. Implementing the necessary legal authorities as provided in 40 CFR 403.8(f)(1);
 - b. Enforcing the pretreatment requirements under 40 CFR 403.5 and 403.6;
 - c. Implementing the programmatic functions as provided in 40 CFR 403.8(f)(2);
 - d. Providing the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403(f)(3); and
 - e. Publishing a list of significant violators as required by 40 CFR 403.8(f)(2)(vii).
27. **By 1 June 2010**, the Discharger shall comply with the Effluent Nitrogen Limitation (Effluent Limitation B.4), or alternatively, the Discharger shall submit a design report and performance demonstration for the effluent storage ponds. If this alternative is pursued, the performance demonstration shall establish that the pond design, in combination with the contents of a Nutrient Management Plan of Attachment F, will be protective of groundwater quality and that seepage from the ponds will not contribute to nitrogen in groundwater exceeding groundwater limitations. This provision will be considered satisfied, following written acceptance from the Executive Officer. The Nutrient Management Plan shall include at a minimum:
- a. Identification of land application area;
 - b. A description of the types of crops to be grown and their water and nutrient uptake rates;

- c. Supporting data and calculations for monthly and annual water and nutrient balances;
- d. Management practices that will ensure wastewater, manure, irrigation water, and commercial fertilizers are applied at agronomic rates;
- e. A system of record keeping.

28. **By 1 January 2010**, the Discharger shall submit an updated Title 22 Engineering Report pursuant to Title 22 of the California Code of Regulations.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on _____.

PAMELA C. CREEDON, Executive Officer

Order Attachments:

- A Site Location Map
- B Flow Schematic
- C Recycled Water Signage
- D Monitoring Well Installation Work Plan Requirements
- E Sludge Management Plan Requirements
- F Nutrient Management Plan Requirements

Monitoring and Reporting Program No. R5-2009-XXXX
Information Sheet
Standard Provisions (1 March 2009)

DMS/dkp: 6/09/2009